



VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Amended) A liquid ejection recording head for effecting recording by ejecting a first liquid and a second liquid which is a different [kind of] liquid through different ejection outlets, while bi-directionally scanning a recording material in a scanning direction, comprising:

a first group of [first] ejection outlet arrays each of which has a plurality of ejection outlets at predetermined intervals arranged in a direction different from the scanning direction[, wherein corresponding ejection outlets in the respective ejection arrays are aligned in the scanning direction]; and

a second group of ejection outlet arrays each of which has a plurality of ejection outlets at predetermined intervals arranged in a direction different from the scanning direction, said second group being disposed adjacent to said first group, [of said first ejection outlet arrays, of second ejection outlet arrays arranged in a manner similar to said first ejection outlet array group;]

wherein said first ejection outlet array[s] group includes a first ejection outlet array for ejecting the first liquid and a second ejection outlet array for ejecting the second liquid[;],

wherein corresponding ejection outlets in said first ejection outlet array and in said second ejection outlet array are aligned in the scanning direction, respectively,

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wherein said second ejection outlet array[s] group includes a third ejection outlet array for ejecting the first liquid and a fourth ejection outlet array for ejecting the second liquid[;],

wherein corresponding ejection outlets in said third ejection outlet array and in said fourth ejection outlet array are aligned in the scanning direction, respectively, and

wherein said first ejection outlet array group and said second ejection outlet array group are disposed such that said first ejection outlet array and said third ejection outlet array are adjacent to each other and such that the ejection outlets of said first ejection outlet array and the ejection outlets of said third ejection outlet array are disposed with a deviation in a direction of arrangement of the ejection outlets so as to be complementary to each other in the scanning direction.

2. (Amended) An apparatus according to Claim 1, further comprising a common liquid chamber for supplying the first liquid to said first ejection outlet array and to said third ejection outlet array.

3. (Amended) An apparatus according to Claim 1, wherein said first ejection outlet array group and said second ejection outlet array group are provided with ejection outlet arrays for ejecting a third liquid which is different from the first liquid and from the second liquid.

4. (Amended) An apparatus according to Claim 3, wherein the first liquid is yellow ink, and the second [ink] and third [ink] liquids are cyan ink and magenta ink.

5. (Amended) An apparatus according to Claim 1, wherein the ejection outlet arrays of said first ejection outlet array group and said second ejection outlet array group are arranged such that ejection outlet arrays for ejecting any given kind[s] of [the] liquid are symmetrically disposed with respect to said first and third ejection outlet arrays.

6. (Amended) An apparatus according to Claim 1, further comprising a fifth ejection outlet array, in addition to said first and second ejection outlet array, for ejecting a liquid [which is a kind of liquid] different from the liquids ejected [through] from said first and second ejection outlets arrays.

8. (Amended) An apparatus according to Claim 1, wherein said first ejection outlet array group and said second ejection outlet array group are provided [in] on one orifice plate.

9. (Amended) An apparatus according to Claim 1, further comprising a plurality of energy conversion element array groups for ejecting the first liquid [through] from said first ejection outlet array group and a plurality of energy conversion element array groups for ejecting the second liquid from said second ejection outlet array group.

10. (Amended) An apparatus according to Claim 9, [wherein said] further comprising a substrate [has] having a crystal face orientation of a <100> plane, on which substrate said ejection outlets and said energy conversion element array groups are disposed.

11. (Amended) An apparatus according to Claim 9, [wherein said] further comprising a substrate [has] having a crystal face orientation of a <110> plane, on which substrate said ejection outlets and said energy conversion element array groups are disposed.

12. (Amended) A liquid ejection head according to Claim 10 or Claim 11, wherein said substrate is provided with a plurality of through-holes for supplying the liquids to [the] said ejection outlet arrays, and said through-holes are formed by anisotropic etching.

13. (Amended) An apparatus according to Claim 8, wherein said orifice plate is made of a photosensitive epoxy resin material.

14. (Amended) An apparatus according to Claim 9, wherein said energy conversion element array groups are groups of electrothermal transducers for generating thermal energy for ejecting the liquids from [through] said ejection outlets.

15. (Amended) A liquid ejection apparatus comprising a carriage for carrying [said] a liquid ejection recording head as [defined] claimed in Claim 1.

16. (Amended) A liquid ejection recording head for effecting recording by ejecting a first liquid and a second liquid which is a different [kind of] liquid through different ejection outlets, while bi-directionally scanning a recording material in a scanning direction, comprising:

an orifice plate provided with a plurality of ejection outlet arrays each having a plurality of ejection outlets arranged at [a] predetermined intervals in a direction different from the scanning direction; and

an element substrate having energy conversion elements, disposed corresponding to [the] said ejection outlets of said orifice plate, for ejecting the liquids, liquid supply paths for supplying the liquids to said ejection outlet arrays of said orifice plate, and a driving circuit for driving said energy conversion elements[; and],

wherein said ejection outlet arrays include a first ejection outlet array for ejecting the second liquid, a second ejection outlet array for ejecting the first liquid, a third ejection outlet array for ejecting the first liquid and a fourth ejection outlet array for ejecting the second liquid [arranged in the order named in the scanning direction, and],

wherein, in the scanning direction, said first ejection outlet array is disposed adjacent to said second ejection outlet array, said second ejection outlet array is disposed adjacent to said third ejection outlet scanning array, and said third ejection outlet array is disposed adjacent to said fourth ejection outlet scanning array,

wherein a supply passage for supplying the first liquid supplies the first liquid to said second ejection outlet array and said third ejection outlet array,

wherein corresponding ejection outlets in said first ejection outlet array
and in said second ejection outlet array are aligned in the scanning direction, respectively, and
wherein corresponding ejection outlets in said third ejection outlet array
and in said fourth ejection outlet array are aligned in the scanning direction, respectively.

17. (Amended) An apparatus according to Claim 16, wherein said energy conversion elements are electrothermal transducer elements for generating thermal energy for ejecting the liquids from said ejection outlets.

18. (Amended) A liquid ejection apparatus comprising a carriage for carrying [said] a liquid ejection recording head as [defined] claimed in Claim 16.

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